

The amendment merely defines more clearly the HF electrode and the LF electrode, and does not change the scope of the claims or introduce any new matter. The Examiner alleges in ¶ 9 of the Office Action that the use of the HF electrode and the LF electrode does not structurally distinguish over the prior art. As stated in the previous Amendment filed on February 11, 2002, the terms HF and LF are not merely functional terms, but do structurally distinguish over the prior art. To more particularly point out and distinctly claim the invention, Applicants have amended claims 11, 16, and 20 to recite that the plasma power source comprises a high frequency power supply coupled with the HF electrode and a low frequency power supply coupled with the LF electrode.

Because the proposed claim amendments merely clarify the terms recited in the claims without changing the scope of the claims, they are believed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Accordingly, entry of the proposed amendments is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is urged. If the Examiner believes a telephone conference would aid in the prosecution of this case in any way, please call the undersigned at 650-326-2400.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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IN THE CLAIMS:

Please amend claims 11, 16, and 20 as follows.

11. (Thrice amended) A substrate processing system comprising:
a deposition chamber comprising a reaction zone;
a substrate holder that positions a substrate in the reaction zone;
said substrate holder comprising a low frequency (LF) electrode;
a gas distribution system that includes a gas inlet manifold for supplying
one or more process gases to said reaction zone;
said gas inlet manifold comprising a high frequency (HF) electrode;
a plasma power source for forming a plasma within the reaction zone of
said deposition chamber, the plasma power source comprising a high frequency power
supply coupled with the HF electrode and a low frequency power supply coupled with the
LF electrode;

an impedance monitor comprising a first impedance probe electrically
coupled to said high frequency electrode to measure the impedance at the HF electrode
and a second impedance probe electrically coupled to said low frequency electrode to
measure the impedance at the LF electrode; and

a processor coupled with the impedance monitor for adjusting processing
conditions of the deposition chamber based on measurements by the first impedance
probe and the second impedance probe.

16. (Amended) A substrate processing system comprising:
a deposition chamber comprising a reaction zone;
a substrate holder that positions a substrate in the reaction zone;
said substrate holder comprising a low frequency (LF) electrode;
a gas distribution system that includes a gas inlet manifold for supplying
one or more process gases to said reaction zone;

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said gas inlet manifold comprising a high frequency (HF) electrode;
 a plasma power source for forming a plasma within the reaction zone of
 said deposition chamber, the plasma power source comprising a high frequency power
supply coupled with the HF electrode and a low frequency power supply coupled with the
LF electrode;

 an impedance monitor electrically coupled to said high frequency
 electrode and said low frequency electrode;

 a computer processor communicatively coupled to said impedance
 monitor so that said computer processor receives as an input the measured impedance
 level of said plasma;

 a variable capacitor electrically coupled to said chamber and controllably
 coupled to said processor wherein said processor adjusts a capacitance level of said
 variable capacitor to vary the impedance of said plasma in response to an output of said
 impedance monitor; and

 a matching network electrically coupled to a high frequency RF generator
 and said gas manifold, wherein said matching network has capacitors that are different
 than said variable capacitor.

20. (Four times amended) A substrate processing system comprising:
 a deposition chamber comprising a reaction zone;
 a substrate holder that positions a substrate in the reaction zone;
 said substrate holder comprising a low frequency (LF) electrode;
 a gas distribution system that includes a gas inlet manifold for supplying
 one or more process gases to said reaction zone;
 said gas inlet manifold comprising a high frequency (HF) electrode;
 a plasma power source for forming a plasma within the reaction zone of
 said deposition chamber, the plasma power source comprising a high frequency power
supply coupled with the HF electrode and a low frequency power supply coupled with the
LF electrode;

an impedance monitor electrically coupled to said high frequency electrode and said low frequency electrode, said impedance monitor including an impedance monitor variable capacitor;

a processor communicatively coupled to said impedance monitor for receiving as an input a measured impedance level of said plasma;

a variable capacitor electrically coupled to said LF electrode and controllably coupled to said processor wherein said processor adjusts a capacitance level of said variable capacitor to vary the impedance of said plasma in response to an output of said impedance monitor; and

a matching network coupled between a low frequency RF generator and said variable capacitor, wherein said matching network includes capacitors that are different than said variable capacitor.